

### **REMARKS / ARGUMENTS**

In the above-identified Office Action, claims 1, 26 and 27 have been rejected as anticipated by or obvious over Cox et al. The Examiner has stated that while Cox et al. is silent about the average diameter of the channels, it teaches the same subject matter of the same structure and composition made by the same method and for the same use. Therefore, a workable average diameter of the channels is either anticipated or obvious by practicing the invention of Cox et al. Applicant has amended the claims to introduce the feature that the foam structure has a free volume of more than 60%. As such, it distinguishes itself from Cox et al. and cannot be stated to be the same subject matter of the same structure and composition made by the same method and for the same use.

The Examiner states that Cox et al. is silent about the average diameter of the channels. He also states that a workable average diameter of the channels is deemed to be either anticipated, or obviously provided by practicing the invention of the prior art, dictated by the same use requirements.

However, from the Cox et al. specification it follows that the end use requirements are substantially different from those of the present invention. The present invention is a solution to the problem of low surface quality as encountered in either closed mould systems, spray up application and/or hand lay up applications.

The end use of Cox et al., on the other hand, is the use of core materials in fiber reinforces plastics specifically in closed mould systems. This requires, in particular according to Cox et al. a good resin flow in the plane of the core material (see paragraphs 10-14 of Cox et al.). The solution that is offered by Cox et al is to provide a material that has (among other properties) a permeability to resin of at least  $5 \times 10^{-9} \text{ m}^2$

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(see, e.g., paragraph 14). Thus Cox et al. teaches that if the core materials are to be used for the indicated purpose (closed mold systems), among others, this requirement of resin permeability must be met.

The present inventors have experienced that materials made from core material of Cox et al. exhibit a low surface quality (see also page 3, lines 3-7 of the present application), which is often acceptable. First of all, it should be noted that the appreciation of such low surface quality of the prior art materials is not self-evident. In many end products of the sort described by Cox et al., for instance in some industrial applications, the surface quality is not the primary concern. It was only after having gained considerable experience with the materials described in Cox et al. that the present inventors appreciated that there was room for improvement in this respect and only then the inventors started investigations and experiments to improve the aspect of surface quality.

The problem of surface quality is not addressed by Cox et al.

In this connection it is noted that it is not easy to quantify "surface quality," though quantifying this property is important to deal with the problem in a scientific way. Application of the orange peel method, described in the present application, enabled the inventors to quantify the quality of the end products and thus assisted in developing the present invention.

After having identified the problem of surface quality, the inventors investigated possible solutions. After extensive experiments the inventors found that this problem could be tackled by providing the members in the core material in the specific way of the present claims, viz. by making the members smaller than 1.5mm and the channel average diameter less than 0.75mm.

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Furthermore, Cox et al. focus on decreasing the amount of resin required (see paragraphs 4, 15 and 16 thereof). Cox et al. teach that to decrease the amount of resin required, the free volume of the structure should be less than 60% ("the free volume is understood to mean the volume of the material that can be accessed by resin"), (see column 3, lines 1-4) The present invention specifically encompasses embodiments wherein the free volume is more than 60%, which underscores that resin saving is not a primary objective. Thus the present invention is not primarily concerned with saving resin, as to Cox et al. Cox et al., therefore, teaches away from increasing the free volume to more than 60%.

Accordingly, it is evident that the end use of a material of the present invention is different from that of Cox et al.

The Examiner also states that Cox et al. teaches "the same subject-matter of the same structure and composition, made by the same method, and for the same use." It is not correct to state that core material of the invention is of the same structure and composition as that of Cox et al., because the materials made from respective core materials have different surface qualities, as mentioned above and as shown by the "orange peel" test. More particularly, Cox et al teaches the disposition of microspheres in a pattern, which, in the course of the invention of Cox et al. was thought to be necessary to the operability of the invention. It was only after observing the low surface quality mentioned in paragraph 5 herein, that the present inventors thought to form the foam structure as now claimed, i.e., utilizing the specific sizes and spacings of the members so as to achieve the free volume of more than 60%.

Also the method of Cox et al. cannot be considered to be the same as that of the present invention, because the present invention requires that the members are of a specific size and placed at a specific mutual distance, both of which dimensions are not disclosed nor suggested in Cox et al.

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In particular, if the teachings of Cox et al. are followed, this would result in a core material wherein the channels would have an average diameter of more than 0.75mm, because the channels of Cox et al. must be relatively large to meet the requirement of high permeability. To meet the requirement of low free volume (saving resin) the members of Cox et al. must be relatively large.

As a result it can be seen that since Cox et al. teach away from the free volume now claimed, Cox et al. neither anticipates nor makes obvious the subject invention.

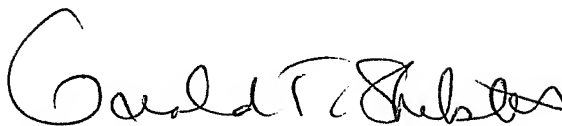
Applicant hereby requests reconsideration and reexamination thereof.

No further fee or petition is believed to be necessary. However, should any further fee be needed, please charge our Deposit Account No. 23-0920, and deem this paper to be the required petition.

With the above amendments and remarks, this application is considered ready for allowance and applicant earnestly solicits an early notice of same. Should the Examiner be of the opinion that a telephone conference would expedite prosecution of the subject application, he/she is respectfully requested to call the undersigned at the below listed number.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gerald T. Shekleton". The signature is fluid and cursive, with the first name "Gerald" being the most prominent part.

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